THE FINANCING OF THE FIRM BY BONDS AND ITS COST

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Abstract: Through this present paper there are presented a few aspects concerning one of the instruments of medium and long term debt which can be used by companies, and that is the bonds credit. So that, after a short presentation of the framework in which this debt method can be used, there are presented the conditions that have to be fulfilled so that a company could have access on the bonds market. A large space is occupied by the parameters of the issue of bonds. Though the cost of debt capital may seem at first glance simple, even trivial to determinate, there are conceptual problems in the calculation. In our work we are concerned with finding the cost of bonds credit.

Key words: bonds, credit, cost, firm, capital market

Jel classification: G31, G32

Some aspects concerning financing of the firm by bonds

Together with the equity and the financing by means of bank loans, important sources of financing from outside the company are attracted appealing to the public savings that is the bond financing.

For any company, in some situations, the equity is insufficient to cover the financing needs, and its growth (by new cash subscription or by the incorporation of the reserves) may encounter difficulties, not only from the juridical point of view but mostly from the inherent risks related to the potential investor's trust in the issuer of shares and those related to the possibility of loosing control for the old shareholders. In addition to that, contracting bank loans implies for the company, sometimes, more restrictive conditions to be fulfilled. These are the reasons that determine the companies, especially the big ones that are marketable, to apply to bonds financing.

For the countries where this means of capital mobilization is an usual practice, the issue of bonds, as a means of attracting the public savings, is preferred mostly by small and middle companies unquoted on this market section, and the issue takes place by the association of these firms to contract bank loans in common name. In the latter case, the issue takes place by the association of many firms that guarantee the loan together, by means of some institutions and collective emplacement agencies, that allocate the attracted capital as loans for the issuing firms. There are situations when even the big firms use this technique, especially when they have relatively reduced financial needs and they don't wish to spend the confidence capital to the public through individual credits, reserving this option only to attract large amounts of money from the market.

At first sight, one might appreciate that a total capital growth by means of the issue of bonds has a bad influence on its financial structure toward the growth of the balance of debts in the total capital. But, in fact, such a procedure has a series of benefic effects over the firm because it connects it, in a durable way, to the capital market, with serious implications in the dynamic adjustment of the capital cost, in the dynamics of the capitals and in the transparency of the external image offering in the same time, new values to the programming of the production activity and to the investments.

There are several *conditions* to be fulfilled in order to have access to bonds financing market:

- it has to be a joint-stock company;
- the firm has to have at least two or three years of activity reflected in the balance sheet approved by the shareholders;
- the issue of bonds by public offer is made on the basis of a prospect of issue;
- the value of the subscribed bond financing has to be completely subscribed.

These requests are specified in the 31/1990 law regarding Commercial Firms republished and modified.

The bonds can be issued in a material form, on paper, on an abstract/unembodied form, by account subscription.

Therefore, as a specified form of the loan, the bonds loan supposes the materialization of the debentures over the issuing firms as securities called bonds.

Therefore, we can define the **bond** as a **securities** that proves that a medium or long term loan that the issuer obliges to repay in a determined period of time, that gives the right to its owner (the creditor of the firm) to a certain annual interest, during the whole period, no matter the economic or financial situation of the issuer.

The issuing company of the bonds establishes, through consulting with the mediation company and based on the its own needs of financing the characteristics **(parameters) of the issue:**

- ***the par value of the bond*** equals the part of the landed amount/stock, represented by each bond. The par value, as mentioned before, is established by law. The bonds from the same issue must be of an equal value, to give the owners equal rights. *The par value of one bond cannot be smaller than 2.5 RON,* except for the par of the bonds convertible in stock, that have an equal value with the stock. The convertible bonds can be turned/changed in shares of the firm that issued them, in the conditions established in the public offer prospect. A small par value presents the advantage to bring foreword the transactions and the inconvenience of complicating the commercial data processing of the debts.
- ***the issue price*** represents the amount paid by the buyer to become the owner of the bond. In some cases, the issue price equals the par value, and in other situations, as, for example, the need to speed up the bond sale, there is a difference between the par value and the issue price (the par value may be bigger than the issue price), called *issue premium*. Sometimes, to make the bonds more attractive, or when the period is big, they are returned when due time at a bigger price than the par, the difference being called *returning/repayment premium* (returning premium - par).

The issuing and returning premiums, the payments concerning the bond issuing and the remuneration for the personnel that ensures the bond sale, decide a cost of the credit higher than the nominal interest.

When the issue of bond financing is *underpar*, and its return is at a higher value than the par, both a issue premium and a returning premium will appear.

- ***the numbers of bonds***;
- ***the total amount of the bonds financing***, is obtained by multiplying the issue price with the numbers of bonds, i.e., practical, the amount which is financed the firm;
- ***the data of use*** is the date when the interest begins to flow;
- ***the data of regulation*** is the date when the investors deposit the amounts for the bonds financing;
- ***the amount of the interest***. The issuer remunerates the borrowed amounts, with a periodic interest on a detachable bond coupon. The interest is determined by multiplying the par value (V_N) with the rate of interest established by the issue process (d). So, the average calculating operation is:

$$\text{Interest} = \frac{V_N \cdot d}{100} \quad (1)$$

- ***the life period, the frequency of payments and the returning modalities.***

In the financial practice, there are used many returning ways. A bond may have one or more specifications for amortization. Generally there are:

a) the normal amortization of the loan;
b) the amortization with specifications for the return with anticipation.

The cost of the bonds credit

We assume that a company contracts debt in total of D, and commits (promises) the reimbursement to its' creditor the annuities A_i, $i = \overline{1,n}$.

The cost of the loans (debts) can be measured through the discounted cost used both in the selection between more possibilities of loan, but also in determining the weighted average cost of capital.

The discounted cost of the loans is given by this discount rate, $r_{d,}$ that allows the equality of the sum of the contracted debts, in our case D, with the annuities (reimbursement rates and interests) discounted with this rate, as follows:

$$D = \sum_{i=1}^{n} \frac{A_i}{(1+r_d)^i} \quad (2)$$

In the following, we will part the annuities keeping in mind the incidence of the profit taxes and if the reimbursement is made entirely and the end of those n years, proportionally in time, or in more "delicate" situations, uneven in time.

In this way, **under the incidence of the taxes,** the interests are deductible of the taxable profit and the real load undertaken by the company is smaller, that is if the debtor company is profitable, the interest that it will deliver each year to its lender will allow realizing tax shield.

So, if considering T = the corporate tax rate, we have the follow relations*:*

- *with the reimbursement of the whole amount at the end of those years:*

$$D = \sum_{i=1}^{n} \frac{D \cdot d(1-T)}{(1+r_d)^i} + \frac{D}{(1+r_d)^n} \quad (3)$$

- *with the reimbursement uneven in time:*

$$D = \sum_{i=1}^{n} \frac{D_i \cdot d(1-T) + R_i}{(1+r_d)^i} \quad (4)$$

where:

d = the nominal rate of the interest (in percentage);

R_i = the amortization from the year 'i' (the yearly reimbursement rate);
D_i = the credit sum remained at the beginning of the year 'i'.
Between Ri and Di the following relations are valid:

$$\begin{cases} D_1 = D \\ D_2 = D_1 - R_1 = D - R_1 \\ D_3 = D_2 - R_2 = D - (R_1 + R_2) \\ \dots \\ D_n = D_{n-1} - R_{n-1} = D - (R_1 + R_2 + \dots + R_{n-1}) \end{cases}$$

- *with the proportional reimbursement in time:*

In this case $R_1 = R_2 = \dots = R_n = R = \frac{D}{n}$ and so the relation becomes:

$$D = \sum_{i=1}^{n} \frac{D_i \cdot d(1-T) + R}{(1+r_d)^i} \qquad (5)$$

In the mentioned relations the expressions $D_i \cdot d$ and $D_i \cdot d \cdot (1-T)$ represent the *paid interests* respectively the *supported* by the company.
A special observation must be made, especially under the current circumstances in our country, and that is that as long as the interest rate can be fixed or variable, this has a special influence on the interest flows. In the first case, the interest flows are known from the beginning, and it the second case, these can only be estimated with a certain probability.
Also, given the fact that there are a series of expenses tied to the administration of the loan, the debtor supports in addition to the reimbursement annuities these expenses also and these expenses (if they have to be paid prior to the moment of the loan granting) and the credit that it receives is diminished with the sum correspondent to these expenses (if they must be paid in the moment of the credit granting). Even if those expenses are not effectively supported from the respective credit, they have a direct connection with it, and in order to know exactly the cost of a loan they must necessarily keep in mind these expenses that sometimes can reach considerable amounts.
Regarding **the cost of the bonds credit**, the formulas established prior are valid and are applied here without difficulties. The only problem "more delicate" appears when the compulsory loan is emitted with *an emission premium*.
We consider a company that emits N bonds, with the nominal value V_N and with the emission price P_E, with $P_E < V_N$. The effective cashed amount is $N \cdot P_E$. But the company has the possibility to diminish the amount of the taxable profit with the difference between the nominal value and the emission price, while the emitted bonds are reimbursed at their nominal value. If the company reimburses the respective amount of N_i obligations in the year "i", it can diminish the taxable profit with an amount equal to the emission premium paid to these bonds, i.e $N_i \cdot (V_N - P_E)$. This calculated diminish, allows, if the company is profitable, to accomplish an tax shield, i.e $N_i \cdot (V_N - P_E) \cdot T$.
So, the cost of bonds credit, r_d, obtained with emission premium, is solution for following equation:

$$N \cdot P_E = \sum_{i=1}^{n} \frac{A_i - N_i (V_N - P_E) \cdot T}{(1+r_d)^i} \qquad (6)$$

where A_i is annuity what must be reimbursed, computed in the same way like for credit bank on medium and log term.

Conclusions

Resorting to the bond financed has both advantages and a series of limits:
As *advantages* we can cite:

- it allows the procurement of some important amount of money to make some large scope investments;
- putting aside the banks and the expenses to remunerate them in the process of getting the equity for production;
- obtaining a bigger net result than the one that would have been obtained if the bond financing value had been the result of the shareholder's equity growth (the gain of net profit equals the savings from the income tax for the interest paid for the bond financing, that are deductible), with direct implications over the relative cost of the bond financing;
- the debt cost is absolutely limited, and the creditors do not take part of the profit growth except for some situations;
- the bonds give the holder no power of decision inside the enterprise, the shareholders not being forced to share the control when they use the debt financing;
- the possibility to withdraw the old bonds, when the possibility of a new bond issue with a lower interest rate;
- the possibility to ransom on the exchange markets their own bonds at the market price (if the ransom price is lower than the par, the enterprise would gain profit).

The *limits* refer to:

- no matter the firm situation, the debts from the bond financing are a fixed expense, the firm paying periodically the interest obligatorily;
- it has a higher risk than other financing forms;
- the annuities that have to be refunded have an exact maturity date, a moment when the enterprise might be caught on the wrong foot as far as liquidities are concerned, and even if they do exist their diminution inevitably takes place;
- in the case of an economic recession, the bond financed firm would have big difficulties to make the payments as compared to the case of share issue financing;
- the contractual relation on a short and medium term inherent to a bond issue imposes much more restrictive specifications in comparison with the share issue or the case of the short term loan/credit;
- the risk of not subscribing the bonds, and, as a consequence, the loss of the investment opportunities might drive, sometimes, to difficulties for the enterprise and, why not, to its bankruptcy.

As for Romania, we consider that we can speak only theoretically about a bond market, because :

- the securities market where the bonds are issued and circulate is insufficiently developed, having a lot of syncope, not functioning continuously as a very active market in this direction;
- people's lack of trust in firms, because even firms that believed themselves to be very solid were bankrupt;
- the people's habit to work with banks (more than that, there is the guarantee of collecting an amount of money as refund in the established guaranteed limit if bankruptcy occurs) and the temptation of currency investment and state titles in the last

few years. But, once with the drastic deflation of the deposits interest rates and with the sinuous evolution of the exchange rate we can also expect a sense of direction of the firms and natural person towards the types of investment like shares and bonds.

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